FIMER

Solar Monitoring
VSN700 Data Logger

Product manual

EN

⚠ **ATTENTION – IMPORTANT SAFETY INSTRUCTIONS**
This document contains important safety instructions that must be followed during the installation and maintenance of the equipment.

⚠ **ATTENTION – SAVE THESE INSTRUCTIONS**
Keep this document in a safe place near the inverter for easy access during installation, operation and maintenance.

⚠ **ATTENTION –** The installer must read this document in its entirety before installing or commissioning this equipment. In addition to what is explained below, the safety and installation information provided in the product manual must be read and followed. For more detailed information regarding proper installation and use of this product, refer to the product manual located at www.fimer.com.

⚠ **ATTENTION –** The product must be used in the manner described in the document. If this is not the case the safety devices guaranteed by the inverter might be ineffective.

⚠ **ATTENTION –** All pictures and illustrations shown in this document are indicatives and must be intended as support for installation instruction only. Actual product may vary due to product enhancement. Specifications subject to change without notice. The latest version of this document is available on the FIMER website.

EN

Table of Content

Operators are required to read this manual and scrupulously follow the indications reported in it, since FIMER cannot be held responsible for damages caused to people and/or things, or the equipment, if the warranty conditions are not observed.

⚠ **ATTENTION –** This manual contains important safety instructions that must be followed during installation and maintenance of the equipment.

⚠ **ATTENTION –** This manual must be considered as an integral part of the equipment, and must be available at all times to everyone who interacts with the equipment.

1. Labels and Symbols

In the manual, the danger or hazard zones are indicated with signs, labels, symbols, or icons.

In the manual and/or in some cases on the equipment, the danger or hazard zones are indicated with signs, labels, symbols or icons.

	Generic hazard - Important safety information. This points out operations or situations in which staff must be very careful.
	Hazardous voltage - This points out operations or situations in which staff must be very careful due to hazardous voltage.
	Positive pole and negative pole of the input voltage (DC)
	This points out that it is mandatory to carry out the described operations using the clothing and/or personal protective equipment provided by the employer.
	This points out that the examined area must not be entered or that the described operation must not be carried out.

NOTE – The choice of the inverter model must be made by a qualified technician who knows about the installation conditions, the devices that will be installed outside the inverter and possible integration with an existing system.

2. Not included in the supply

FIMER accepts NO liability for failure to comply with the instructions for correct installation and will not be held responsible for systems upstream or downstream the equipment it has supplied. It is absolutely forbidden to modify the equipment. Any modification, manipulation, or alteration not expressly agreed with the manufacturer, concerning either hardware or software, shall result in the immediate cancellation of the warranty.

The Customer is fully liable for any modifications made to the system.

Given the countless array of system configurations and installation environments possible, it is essential to check the following: sufficient space suitable for housing the equipment; airborne noise produced depending on the environment; potential flammability hazards.
FIMER will NOT be held liable for defects or malfunctions arising from: improper use of the equipment; deterioration resulting from transportation or particular environmental conditions; performing maintenance incorrectly or not at all; tampering or unsafe repairs; use or installation by unqualified persons.

FIMER will NOT be held responsible for the disposal of: displays, cables, batteries, accumulators etc. The Customer shall therefore arrange for the disposal of substances potentially harmful to the environment in accordance with the legislation in force in the country of installation.

3. Field of use, general conditions

FIMER shall not be liable for any damages whatsoever that may result from incorrect or careless operations.

You may not use the equipment for a use that does not conform to that provided for in the field of use. The equipment MUST NOT be used by inexperienced staff, or even experienced staff if carrying out operations on the equipment that fail to comply with the indications in this manual and enclosed documentation.

3.1 Intended or allowed use

This device is monitoring equipment designed for data collection and low-voltage connection to inverters, weather stations, string combiners, and other photovoltaic equipment.

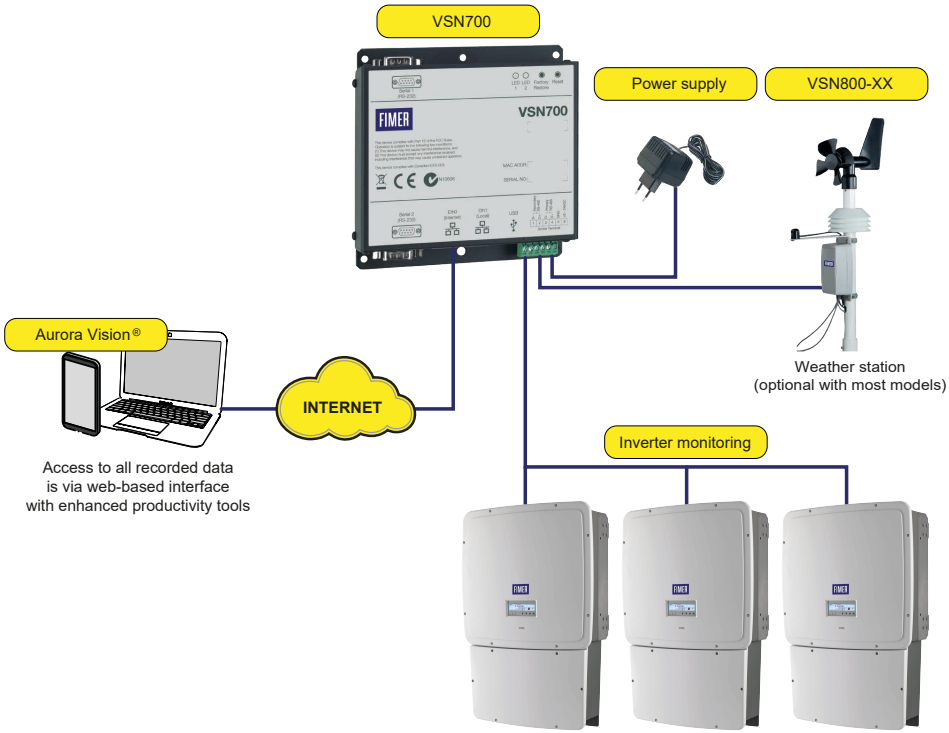
4. System overview

The VSN700 series data loggers are a lightweight solution for remote data acquisition, which enables PV system owners to benefit from advanced energy reports. The data logger collects and analyzes energy generation data from all connected FIMER (and legacy Power-One) solar inverters and other supported devices. System performance and energy information are logged into a database on the Aurora Vision® Plant Management Platform where it can be retrieved and used for analysis via any standard web-browser on an Internet connected device.

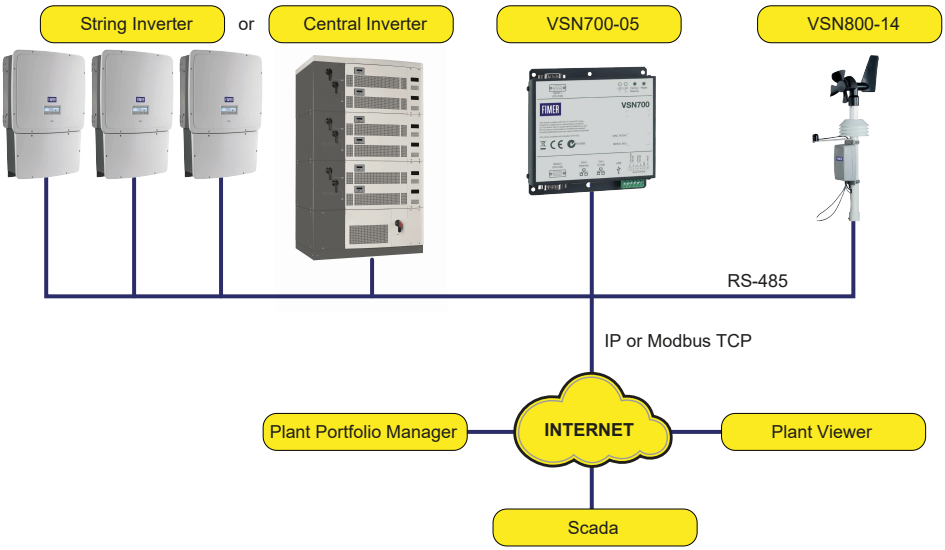
The installer logs on to the Aurora Vision website to register the VSN700 series data logger and ensures that the logger is correctly passing information to the servers. The installer provides a URL to the end user for access to Aurora Vision Plant Viewer. The installer can also monitor all of their sites through a web-browser using Aurora Vision Plant Portfolio Manager.

The VSN700 in conjunction with the Aurora Vision solution brings the following benefits:

- Safeguard Your Investment and Maximize Your Return
- Improved Solar Energy System Efficiency
- Lower Life Cycle Costs
- Real-time and Historic Data Presented Using Web-based Devices
- Alarm Functions and Device Communication Failure
- Remote Access to all Data Using Internet Technology



4.1 Commercial and Utility Application with VSN700-05



The information in this document applies to all VSN700 Data Logger models. This guide provides instructions for installing the data logger hardware to work directly with FIMER (or legacy Power-One) solar inverters and for setting up the Aurora Vision management system for remote data access.

The VSN700 consists of a **data logger/gateway**, a **universal AC/DC power supply** adaptor, and optionally comes with a **DIN rail mounting kit.** The data logger connects to a Local Area Network (LAN) with an Ethernet RJ45 connection. Typically it connects to a Digital Subscriber Line (DSL) or Cable modem through a router to get access to the Internet. In summary, any kind of Internet connection will work.

4.2 VSN700 Data Logger models

The data logger comes in three models. The feature differences are provided in the table below.

Model	Supported Devices and Features
VSN700-01-XX (Residential)	Monitor up to **5 x FIMER (or legacy Power-One) single-phase** and/or small three-phase (Trio 5.8/7.5/8.5) string inverters.
VSN700-03-XX (Commercial)	Monitor up to **10 x FIMER (or legacy Power-One) string inverters and 1 x FIMER VSN800 Weather Station.** String inverters can be single-phase or three-phase.
VSN700-05-XX (Max)	**Monitor any FIMER (or legacy Power-One) solar inverters.** **Monitor other supported FIMER and 3rd party devices**; including, meters, combiners, and weather stations. **Includes a Modbus** TCP server and converts proprietary Power-One inverter data maps into SunSpec compliant Modbus data maps for easier SCADA system integration.

5. Installation

Qualified personnel with appropriate training and experience must perform the installation of the VSN700. Follow standard safety precautions during all procedures. Appropriate personal protection equipment (PPE), such as safety gloves and safety glasses is recommended.

⚠ **WARNING –** During normal operation, dangerous voltages flow through many parts of the system, including: terminals, all I/O Modules (Inputs and Outputs) and their circuits. All Primary and Secondary circuits can, at times, produce lethal voltages and currents. Avoid contact with any current-carrying surfaces. Installation may also require close proximity to high-voltage high-current wires, so proper caution should be exercised when installing these devices.

⚠ **WARNING –** Make sure all power is switched off before performing installation. These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that specified in the operating instructions unless you are qualified to do so.

5.1 Preparation

Make sure you have the following tools and materials prior to starting installation.

5.1.1 Tools

- Standard Electrician's Toolkit
- Personal Protective Equipment (Gloves, Goggles, Clothing)

5.1.2 Materials and Test Equipment

- Twisted-Pair RS-485 Wire (Belden#3106A or equivalent).

NOTE – DO NOT USE CAT5/6 CABLE FOR THE RS-485 DATA WIRE.

- Ethernet Cable to make Network Connection
- Laptop Computer with Internet Browser
- Second Ethernet Cable for Logger configuration
- Mounting Screws and/or Brackets

It is also useful to know if you need to perform Asset Registration or final End-to-End Data Checks after physical installation is complete. If so, you will need a **User ID / password** to log in to Aurora Vision **Plant Portfolio Manager**, and additionally you will need Administrator privileges to access the **Administration** tool in Aurora Vision. See the "Commissioning" section for details.

5.2 VSN700 installation

1. Check packaging for all components
   - Data Logger
   - Power Supply Adapter (not included with VSN700-05-00 model)
   - DIN rail mounting kit for 35mm DIN rails (VSN700-05-00 model only)

2. Determine the indoor location of the VSN700.
   For reliable operation, it is required that the data logger be located within 100m (330 ft.) of an Ethernet connection and within 1200m (4000 ft.) of the inverter(s).

3. Mount the data logger.
   The logger comes with flanges with pre-drilled holes for easy mounting. A DIN rail mounting kit comes with the VSN700-05-00 model and can be optionally ordered with other models. All data logger versions require a weather protected site. The included power supply requires an ambient temperature between 0oC and 40oC but the logger can operate between -40oC and 85oC.

4. Connect shielded twisted-pair wire to the RS-485 terminals on the inverter(s). If there are multiple inverters, wire the inverters in a daisy chain configuration. Refer to your inverter manual for information on terminal locations and daisy chaining inverters. Use RS-485 data wire with one twisted pair, one ground conductor, and a shield with drain wire (Belden#3106A or equivalent).

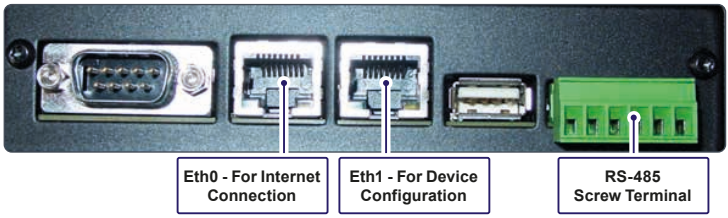
NOTE – DO NOT USE CAT5/6 CABLE FOR THE RS-485 DATA WIRE.

5. For systems with multiple inverters, the RS-485 network must be terminated at the final inverter by a switch near the RS-485 terminal block. The farthest inverter in the daisy chain must be terminated by setting the inverter termination switch to ON. For all other inverters in the daisy chain, turn OFF the termination switch. Below are pictures of RS-485 terminals in various inverters, as well as locations of the termination switch.

NOTE – In some environments you may experience poor RS-485 signal quality due to noise. If signal quality is a problem, double-check that the last inverter in the chain is terminated and other inverters are not terminated. If problems persist, it may prove helpful to attach a 120 Ohm 0.5 Watt resistor across screw terminals 1 and 2 on the data logger.

READ THE MANUAL – If you need more information, consult your inverter's manual for locating the RS-485 terminals and the termination resistor switch.

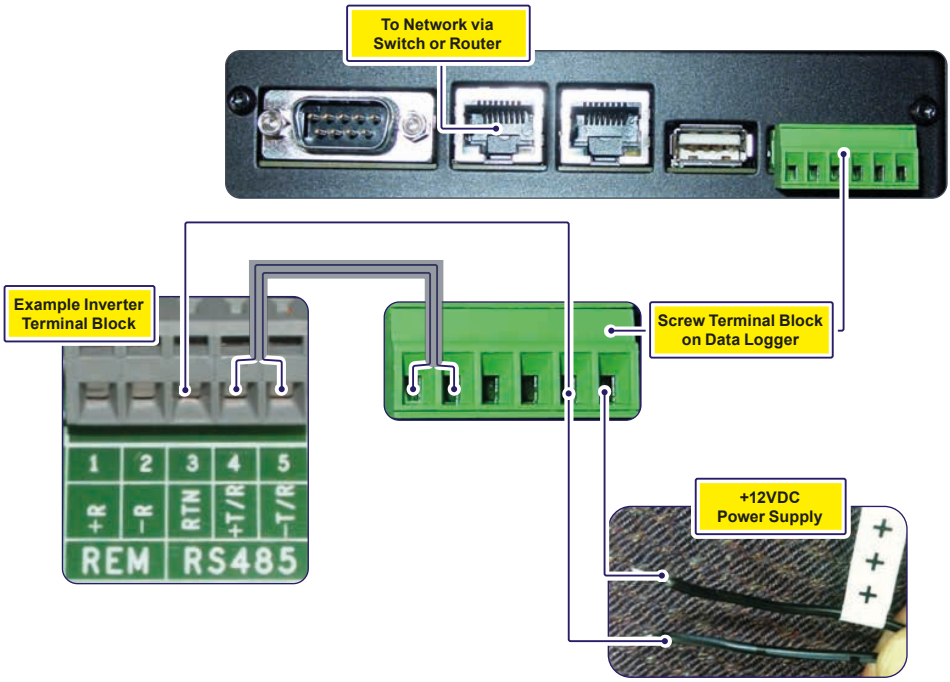
6. Connect the other end of the shielded twisted-pair wire to Secondary RS-485 terminals on the data logger. Use the table below and the figure on page the next page to make the proper connections. See the section on Adding an FIMER Weather Station for information on connections for an attached weather station.



RS-485 Connection	Data Logger RS-485 Screw Terminal Connector	Example Inverter RS-485 Pin Label
RS-485 Negative (-)	1	-TR (Port 5)
RS-485 Positive (+)	2	+TR (Port 4)
RS-485 Negative (-)	3	----
RS-485 Positive (+)	4	----
Ground	5	RTN (Port 3)
VDC Power Only	6	----

7. VSN700 models come packaged with an AC/DC power adapter. The DC output wires are pre-stripped and tinned for connecting to the screw terminal of the data logger. Attach the conductor with the white label, which is positive 12 volts DC, to Port 6 of the data logger's screw terminal. Attach the other solid black DC ground conductor to Port 5 of the data logger's screw terminal. See the figure below.

   VSN700-05-00 models come with a DIN Rail kit for mounting directly onto a DIN rail within an inverter. After DIN Rail mounting, connect the data logger directly to a 9V-24V (±10%) DC voltage source capable of supplying greater than 7.2VA. The logger will typically only consume about 3VA during normal operation.



8. For models with an AC/DC adapter, connect the adapter to a standard power outlet. The power supply accepts a Universal AC input for use worldwide and will come with a plug adapter that is specific for your region. An appropriate travel adapter can be used if connecting to a different socket type.

9. Check the data logger's power.
   There is a pair of light emitting diodes (LEDs) on the side of the logger, opposite the RS-485/DC power terminal block. The LEDs flash during system boot and then LED2 turns solid green when power is supplied and the system is ready.

5.3 Inverter communication

FIMER (and legacy Power-One) PVI and UNO inverter models use a proprietary communication protocol called **Aurora Protocol**. To monitor these inverters with a VSN700-01 (Residential) or VSN700-03 (Commercial) Data Logger model, they must be attached to the **Secondary RS-485** port on the data logger.

FIMER PRO inverter models use **Modbus RTU** protocol and must be attached to the **Primary RS-485** port VSN700-03 (Commercial) Data Logger model. Modbus devices are not supported by the VSN700-01 (Residential).

The RS-485 ports on the VSN700-05 (Max) version are configurable for either protocol. Specific FIMER (and legacy Power-One) inverters support both protocols and will have separate ports dedicated for each; consult your inverter's manual for its capabilities. In any case, all inverters (and other devices) connected in a particular daisy chain must use the same communication protocol and protocol settings. For systems with multiple inverters, each inverter in a daisy chain must be manually assigned a different RS-485 serial address. Refer to the inverter manual(s) for instructions on RS-485 wiring and setting the communication parameters like baud rate and RS-485 serial address.

Write down the serial number and RS-485 address for each inverter so you can determine which inverter is which on the monitoring system.

6. Commissioning

The following are the major steps required to make sure the system is operational and data is being passed to Aurora Vision servers:
1. Connect the data logger to your Ethernet network.
2. Configure the data logger through its web-based user interface.
3. Verify that you have a working Internet connection from the data logger to Aurora Vision's servers.
4. Perform Asset Registration through the **Administration** page on Aurora Vision (reachable from **Plant Portfolio Manager** web interface).
5. Verify end-to-end data transfer using the Aurora Vision Plant Portfolio Manager web portal.

Commissioning is not complete until you have performed the final two steps above over the Internet. However, these two steps do not necessarily need to be performed as part of the hardware installation.

6.1 Connect to the Internet

Connect the data logger to the Internet through a local area network. Use standard Ethernet cable and connect it to the Ethernet RJ-45 port marked Eth0 (Internet) on the front of the data logger. The data logger can connect through any switch or router in your network.

NOTE – The data logger is by default set to DHCP and will try to acquire its IP-address from the DHCP server on your local network (LAN). The data logger is designed for use on an Ethernet network and must be assigned an IP address (DHCP or static) to make it accessible. If it is required to set a static IP for the data logger, your connection will not work until this address is set. If required, refer to the section below on setting a Static IP address. Normally no ports should need to be opened in the network firewall. The data logger will use port 443 outbound to transmit the data.

Verify that the data logger has an Ethernet connection. The **Eth0 (Internet)** LED can be used for detecting network link and network traffic:
- Eth0 LED = GREEN = Link
- Eth0 LED = GREEN BLINK = Traffic
- Eth0 LED = OFF = No network link

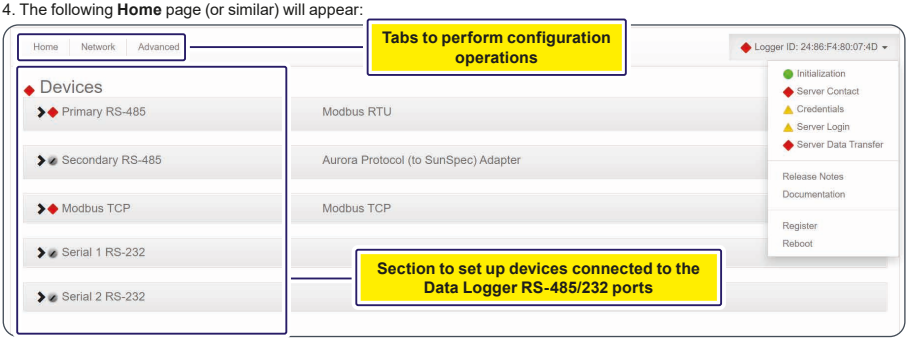
NOTE – If no activity is seen on the LEDs, double-check all connections.

FIMER recommends a wired Internet connection because it is more reliable and requires less setup. If it is necessary to connect to a wireless network, a wireless network bridge with an Ethernet port is required. Purchase and configure the wireless network bridge that is compatible with the host wireless network. Ensure that the wireless connection is operational with a laptop before connecting it to the Eth0 (Internet) port of the data logger.

NOTE – FIMER does not provide Internet service or the cables required to connect the data logger to the Internet.

6.2 Configure the data logger

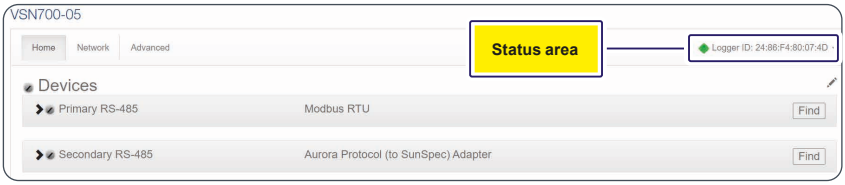
The installer must use a laptop with an Ethernet cable to communicate directly to the data logger's web-based user interface for configuration. The data logger's web server has many options and capabilities, but here we only describe those necessary to get your system up and running.
1. Configure the laptop's Ethernet port to obtain a Dynamic IP address automatically through DHCP; typically, laptops are already configured this way.
2. Connect the Ethernet cable between the secondary Ethernet port marked **Eth1 (Local)** on the data logger and the laptop computer.
3. Wait for the laptop to obtain an IP address from the data logger and then open an Internet browser window on the computer. Type in the following URL in the address bar: **http://172.17.17.1**
4. The following **Home** page (or similar) will appear:



NOTE – Due to the constantly evolving nature of software, the images shown in this manual may be out of sync with the current user interface. The options mentioned should still be accessible, but may be renamed or accessed in a different way than is described in this manual. Check https://docs.auroravision.net for the latest version of this manual.

Select the tabs across the top to perform configuration operations and select one of the ports in the **Devices** list to set up devices.

Verify all the icons for the data logger in the status area to the right are green. It may take some time for all the icons to turn green.



The MAC address (Logger ID) for the data logger is displayed at the top of the page. Be sure to write down the MAC address of the data logger. The MAC address is needed later for Asset Registration.

6.3 Configure for devices

The Devices list on the Home page shows all the different devices connected through all the ports on the data logger. It is essential that the devices you set up here match how devices are physically connected to your data logger.

By default, only the two RS-485 ports are set up. The primary RS-485 port is set to Modbus RTU and the secondary RS-485 is set to Aurora Protocol (to SunSpec) Adapter.

The default settings support hardware connections where all inverters that use Aurora protocol are attached as an RS-485 daisy chain to the Secondary RS-485 port. Optional weather stations and supported inverters that use Modbus RTU are connected to the Primary RS-485 port. See Section 4 if you are adding a VSN800 Weather Station. See Section 5 for advanced configuration options if you are using VSN700-05 (Max).

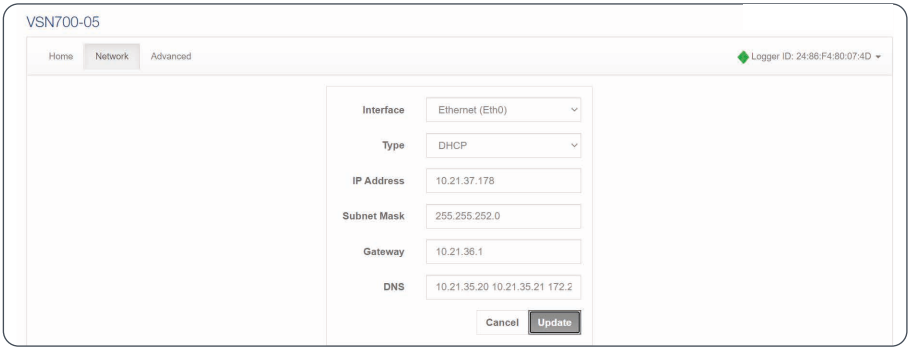
For the Secondary RS-485 connection, once inverters using the Aurora Protocol are properly addressed and wired in the RS-485 daisy chain, inverters will automatically be discovered and displayed.

6.3.1 Set a static IP address

Setting a Static IP is only necessary if required by your network. In almost all cases you can skip this section.
1. Obtain Static IP address information for the site.
2. Select the Network tab. Set the Type (Network Connection Type) field to Static. The page allows you to type in the following information:

- IP address
- Subnet Mask
- Gateway
- DNS (separate primary and secondary DNS servers with a single space)

3. Press Update at the bottom of the page.



The data logger needs to be restarted before the network changes take affect. In the **Home** tab use the **Reboot Logger** button to reboot the logger.

6.4 Verify Internet connectivity to Aurora Vision servers

1. Verify that the Ethernet cable is connected between the data logger's **Eth0 (Internet)** and your network.
2. The data logger acts as a router. From your laptop connected to **Eth1 (Local)**, verify internet connectivity by opening up an Internet browser window and connecting to www.auroravision.net.
3. The remaining steps for commissioning are performed via the Internet to check end-to-end communications. Proceed with one of the following steps:
   • If you are not responsible for these remaining steps, be sure to pass on the MAC address (Logger ID) information to the responsible party. Remove the cable from **Eth1**. Installation is complete.
   • If asset registration is already complete, proceed to the section on **End-to-End Data Check**.
   • If asset registration is not complete, proceed to the next section on **Asset Registration**.

6.5 Asset registration

Asset registration is performed via the Administration tool in Aurora Vision. Asset registration assigns the MAC address of your logger to a specific plant in Aurora Vision. Asset Registration can be performed before or after the on-site installation is complete. When you register the data logger, all the assets (inverters and other devices) reporting to the data logger are also registered. A Plant must be created on Aurora Vision using the Administration tool before the data logger can be assigned and registered to it. Note that access to Administration tool requires an Aurora Vision User ID and password with Administrator privileges.

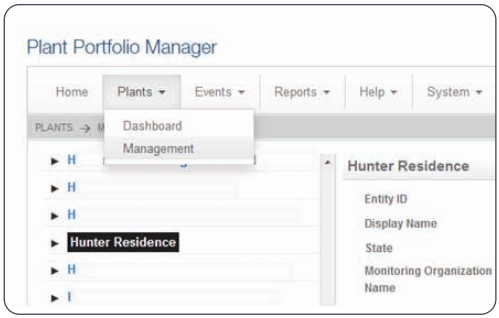
From the data logger's user interface in the Logger ID drop-down menu, click the **Register** button to go to Asset Registration on the Administration page of the Plant Portfolio Manager. If you are not using the data logger's web-based user interface, go to https://admin.auroravision.net/customeradmin. Select **Administration > Register Logger** and type in the MAC address of the data logger. Follow the steps on the Asset Registration page to select the plant that the data logger will be associated with.
See the Plant Portfolio Manager Users Guide for help in using the Administration tool for asset registration. Go to https://docs.auroravision.net for all the latest product documentation.

6.6 End-to-end data check

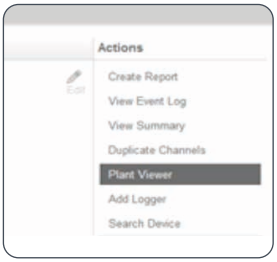
The last check is to make sure that data is actually being reported and is visible on the Aurora Vision portal. Wait 15 minutes and log on to www.auroravision.net using a web browser on an Internet connected device. Within Aurora Vision, go to the **Plants > Dashboard** page for the plant and open the **Device Status** panel. Verify that the energy readings agree with the inverter(s) and that all of the monitored devices are communicating, as indicated by the **Last Reported** time.

6.7 Plant Viewer access for end users

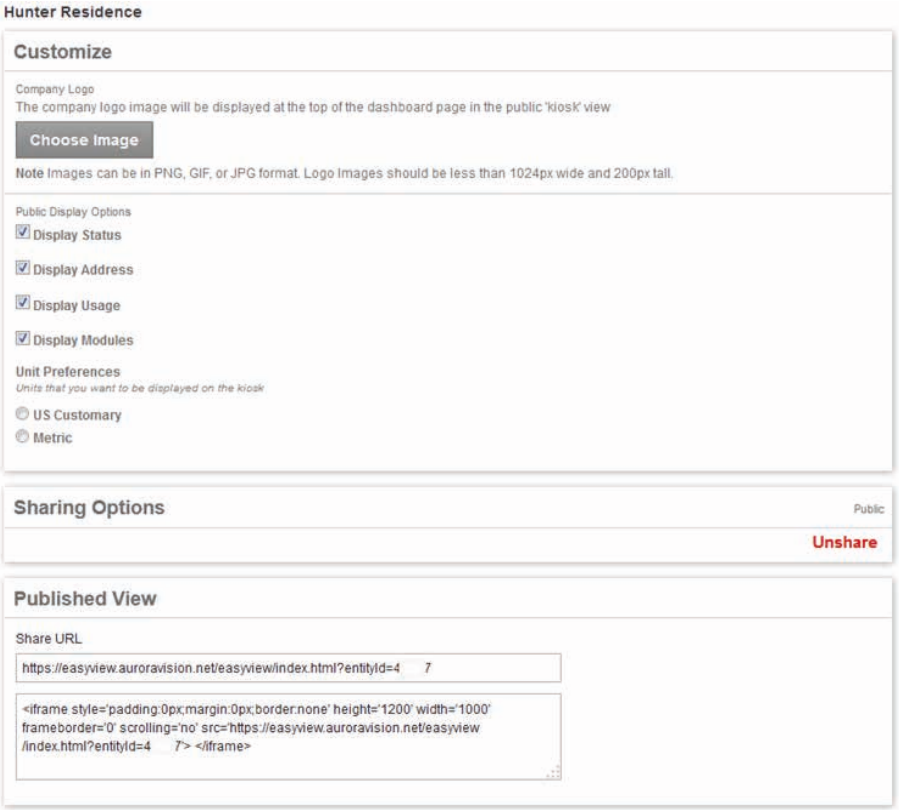
The installer must supply the user with their unique Plant Viewer URL so they can monitor their system. To find the URL for a specific user's plant within Aurora Vision, follow these steps:
1. Log on to Plant Portfolio Manager at www.auroravision.net and go to **Plants > Management**.
2. Select the Plant from the asset list in the screen area to the left.



3. Once the correct Plant is displayed, select **Plant Viewer** from the **Actions** menu.



4. A page is displayed to configure the user's Plant Viewer options. Scroll down to the **Published View** section. The URL to provide to the customer is in the **Share URL** field.



NOTE – For detailed information about plant sharing options see the Plant Portfolio Manager User Guide. Go to https://docs.auroravision.net for all the latest product documentation.

7. Adding an FIMER weather station

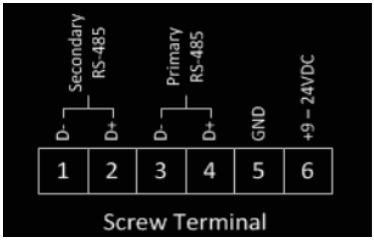
FIMER's VSN800 Weather Station must be wired to the **Primary RS-485** port on VSN700-03 (Commercial version). Weather stations are not supported by VSN700-01 (Residential version). Weather stations can be attached to any port configured for Modbus RTU on VSN700-05 (Max version).

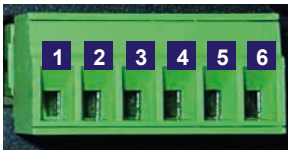
1. Connect shielded twisted-pair wire to the RS-485 terminals on the weather station. Use RS-485 data wire with one twisted pair, one ground conductor, and a shield with drain wire (Belden#3106A or equivalent).

NOTE – DO NOT USE CAT5/6 CABLE FOR THE RS-485 DATA WIRE.

2. Connect the other end of the shielded twisted-pair wire to the Primary RS-485 terminals on the data logger. Use the table below and the figure on the next page to make the proper connections.

RS-485 Screw Terminal





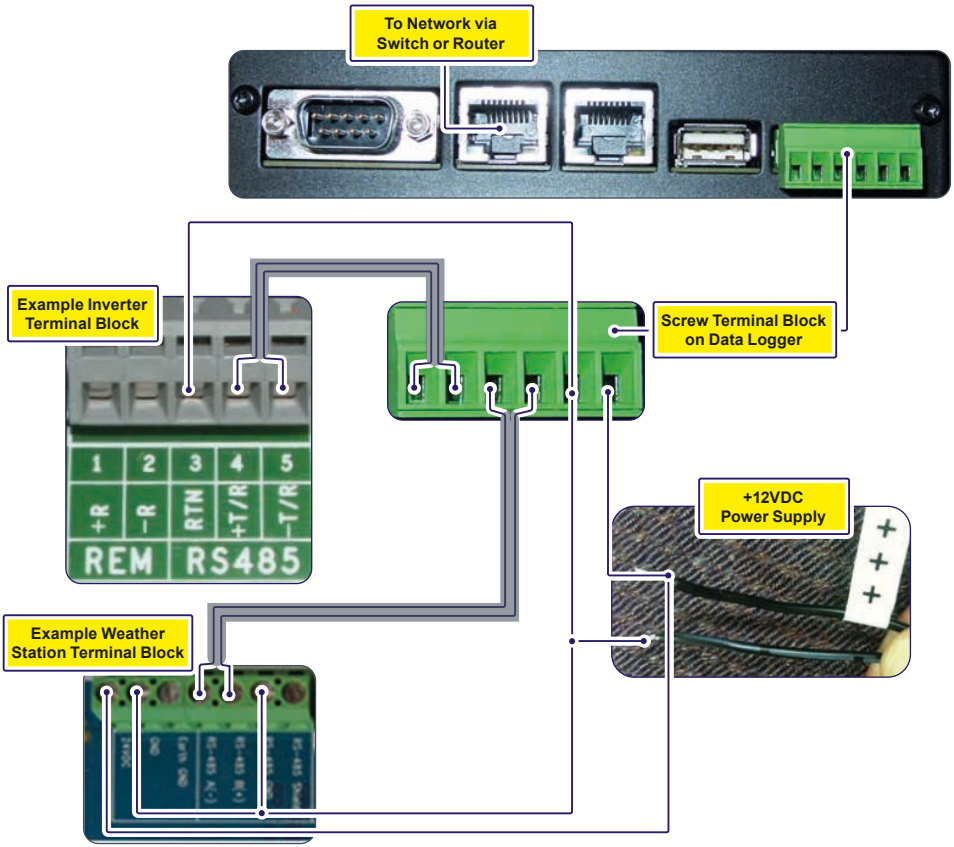
RS-485 and Power Connections	Data Logger RS-485 Screw Terminal Connector	Example Inverter RS-485 Pin Label	Example VSN800-XX RS-485 Pin Label
RS-485 Negative (-)	1	-T/R	----
RS-485 Positive (+)	2	+T/R	----
RS-485 Negative (-)	3	----	RS-485 A(-)
RS-485 Positive (+)	4	----	RS-485 B(+)
DC Ground	5	RTN	RS-485 GND and GND
VDC+ Power Only	6	----	24VDC

3. The VSN800 Weather Station can tap the power terminals on the data logger for its power source. Tapping off the data logger's power source is optional; any appropriate DC power source that meets the specifications of the weather station may be used. To use the data logger's power source for the weather station, connect shielded twisted-pair wire to the power terminals on the weather/environmental station. For distances less than 400 feet between the data logger and the weather station we recommend using #22 AWG stranded copper wire. For longer distances use a heavier gauge wire. Consult the VSN800 Weather Station datasheet for the minimum required voltage and maximum allowed wire gauge. If unable to meet these specs because of voltage drop then a separate power supply closer to the weather station must be used.

NOTE – DO NOT USE CAT5/6 CABLE FOR THE POWER WIRES.

4. Connect the other end of the shielded twisted-pair wire to the +9-24VDC and GND terminals (terminals 6 and 5) on the data logger. It may be necessary to use a wire nut to attach the multiple wires to the GND terminal on the data logger.

Wire the weather station to the data logger as shown in the figure below.



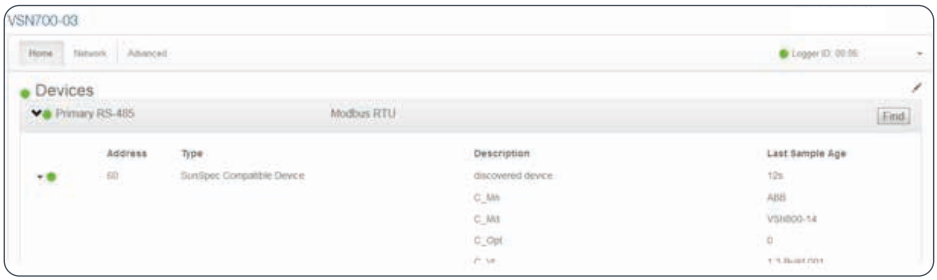
7.1 Configuration for a weather station device

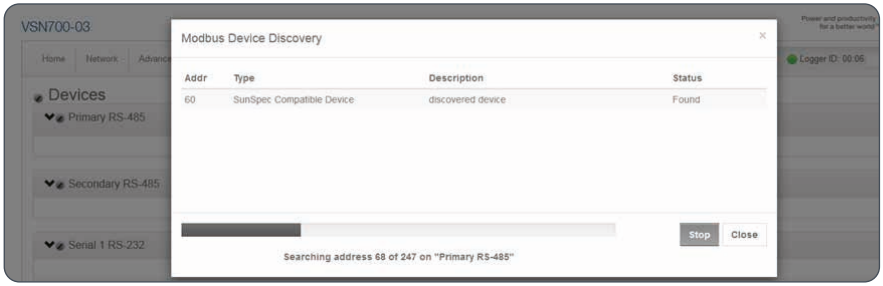
The Devices list on the data logger's **Home** page will show all the different devices connected through all the ports on the data logger. It is essential that the devices you set up here match how devices are physically connected to your data logger.

The port configuration for the **Primary RS-485** port on the Commercial version VSN700 (VSN700-03) must remain set to **Modbus RTU** (default value) if adding an optional weather station.

Configure the **Primary RS-485** port using the following procedure. Bring up the data logger's web interface in the same manner as for configuring inverters (connect an Ethernet cable from the data logger's **Eth1 (Local)** port to a laptop and go to http://172.17.17.1).

To add the VSN800 weather station go to the **Home** tab and push the **Find** button for the **Primary RS-485** port. Click on **Start** in the window that pops up to begin the device discovery process. The default Modbus address for VSN800 Weather Station is 60. It is not necessary to let the scan finish, once it has discovered the device the scan can be stopped and closed. The weather station will be displayed as a **SunSpec Compatible Device**.





8. Interfacing VSN700-05 with SCADA systems

This section describes how to interface external monitoring or SCADA systems with the VSN700-05 data logger and is intended only for the Max version data loggers. This section does not apply to the Residential and Commercial versions. There are two important aspects of the data logger that allow for easy integration into a SCADA system, the Aurora Protocol to SunSpec Adapter and Modbus TCP communication.

8.1 Aurora Protocol to SunSpec Adapter

The data logger's Aurora Protocol to SunSpec Adapter is a software adapter that has two main functions
• it continuously polls inverters that use the proprietary Aurora Protocol as fast as it can
• caches data gathered from these inverters in SunSpec compliant Modbus data maps.

NOTE – The SunSpec Alliance is a global trade alliance that aims to standardize how inverter data is stored.

This allows SCADA systems to use standard **Modbus TCP** read commands and a common SunSpec inverter data map to gather information from any FIMER (or legacy Power-One) inverter that only supports Aurora Protocol.In addition, a SCADA system can send a supported Modbus write command to a SunSpec inverter control register and the data logger sends the equivalent Aurora protocol command(s) causing the inverter to execute a control action, such as grid disconnection or output power reduction.

NOTE – Note that only inverters using the Aurora protocol have their data converted and cached in SunSpec compliant Modbus data maps.

NOTE – For complete SunSpec specifications and open information standards, go to http://www.sunspec.org/specifications/.

8.2 Modbus TCP server

External monitoring or SCADA systems must communicate with the data logger using the **Modbus TCP protocol**. The data logger's **Modbus TCP server/gateway** converts and forwards onto the serial port(s) commands intended for Modbus RTU capable inverters or other Modbus RTU protocol devices connected to the data logger. The device response is then converted and forwarded back to the Modbus TCP client that sent the command.

The Modbus TCP server also communicates with the SunSpec Adapter allowing SCADA systems to gather data using Modbus TCP protocol from inverters which use the proprietary Aurora protocol. When a Modbus TCP client sends read commands intended for an inverter that is using Aurora protocol, the data logger's Modbus TCP server will respond based on data that has been cached for that inverter by the SunSpec adapter. When a Modbus TCP client sends a supported write command, the SunSpec adapter will send the equivalent Aurora protocol command(s) to the inverter. If there are any problems with the command, an exception response will be sent back to the Modbus TCP client. There is no confirmation that a write command is successful and that the inverter has performed the control action; so, write commands should always be followed up shortly after with read commands to confirm the change(s).

8.3 Data logger configuration for SCADA or other monitoring systems

8.3.1 Set a Static IP Address for the data logger

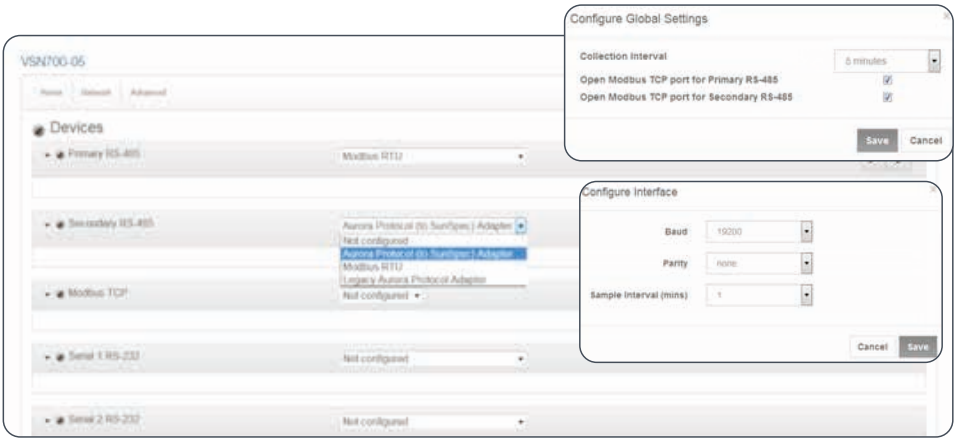
Connect a PC to the **Eth1 (Local)** port of the data logger and browse to address http://172.17.17.1 to access the data logger's web based configuration UI. In the **Network** tab configure a static IP address for the data logger's Eth0 port that is either within the same subnet as the SCADA system or can be routed to/from the SCADA system. Use a single space between your primary and secondary DNS servers, if applicable. Alternatively, the data logger can be set for DHCP if the DHCP server it receives its IP address from is configured to always assign the same IP address to the data logger.

8.3.2 Configure the serial interfaces

Configure the serial port interfaces for the appropriate communication protocols based on the devices installed at the site. If using inverters that only communicate using the Aurora protocol, then the serial interface they are connected to must be set for **Aurora Protocol (to SunSpec) Adapter** for the inverter's data to be accessible by Modbus TCP clients. Note that the ULTRA central inverter is only supported via **Modbus RTU** or via the **SunSpec Adapter** options; it is not supported via the **Legacy Aurora Protocol Adapter** option. Setting the interface for Modbus RTU will allow for better polling performance; however, advanced features like remote inverter firmware upgrade are only available through the **SunSpec Adapter** option.

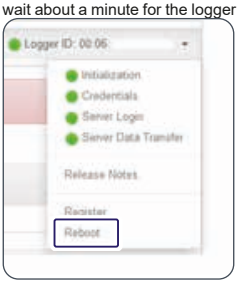
In the **Home** tab click the pencil icon and use the drop down menus to configure the Primary and Secondary RS-485 interfaces based on the type of devices connected to these ports. Polling performance is better if half of the devices are connected to one of the data logger's RS-485 ports and half connected to the other, though this may not be practical depending on the physical locations of devices or protocols used. Try to spread as many devices as possible across the two ports for better polling performance. The protocols used on each interface can be changed on the Max version data logger. They can both be set for the same protocol or different protocols. All devices daisy chained to a particular port must use the same communication protocol and settings as those set in the data logger for that port, including baud rate and parity checking. Note that to monitor the ULTRA central inverter via Modbus RTU, the baud rate for the interface on the data logger must be set for 19,200 bps.
Verify that both ports are configured to the appropriate baud rate and parity for the connected serial devices by clicking on the wrench

icon next to each interface to access the **Configure Interface** menu(s). If communicating with inverters via Modbus TCP, open the port(s) in the firewall associated with the RS-485 interface(s) by clicking the wrench icon next to the red X to open the Configure Global Settings menu. The following image shows an example where one interface is configured for Modbus RTU and the other interface for Aurora Protocol (to SunSpec) Adapter.

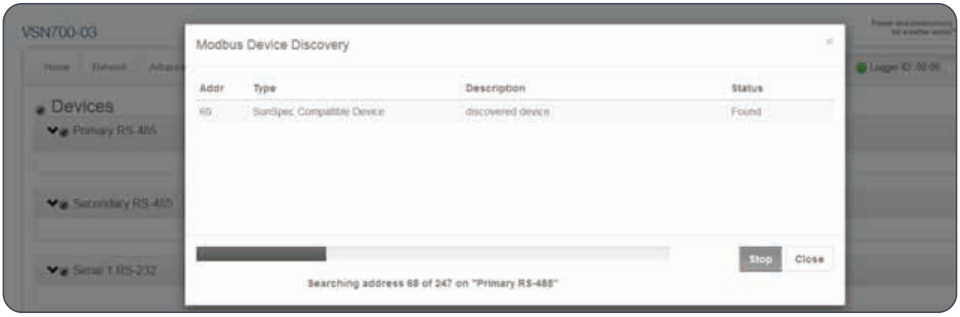


Save the changes by pressing the floppy disk icon.

The logger needs to be rebooted for the configuration changes to take effect. In the drop-down menu by **Logger ID**, click on **Reboot**, and wait about a minute for the logger to fully reboot.



Now that the data logger has been configured, devices can be added to the logger either manually or by using the Find button(s). Devices using Aurora protocol will be automatically discovered.



8.3.3 Communication with devices by SCADA or monitoring system

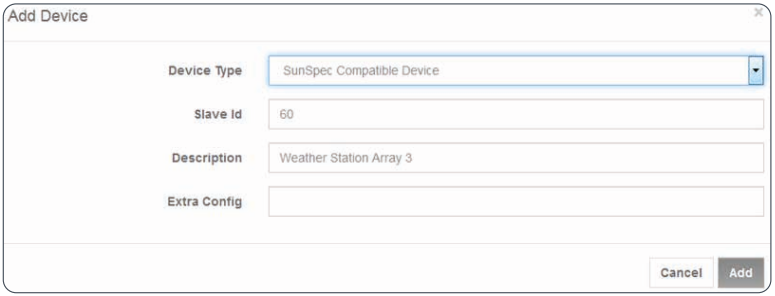
The external monitoring or SCADA system communicates with the serial devices through the data logger's Modbus TCP server/gateway. The data logger's **Eth0 (Internet)** interface and the external system need to be on the same network subnet or have a route set up in order to communicate. The Modbus TCP ports must also be opened as previously described. The data logger forwards Modbus TCP traffic on port 502 to the Primary RS-485 interface and traffic on port 503 to the Secondary RS-485 interface. For example, to communicate with an inverter that uses Aurora protocol at RS-485 address 14 connected to the Primary RS-485 port which has been configured for **Aurora Protocol (to SunSpec) Adapter**, the Modbus TCP command would be pointed to: <Eth0_IP_address>:502:14. To communicate with a Modbus RTU device at RS-485 address 26 connected to the Secondary RS-485 port which has been configured for **Modbus RTU**, the Modbus TCP command would be pointed to: <Eth0_IP_address>:503:26.

8.4 Adding 3rd party devices

If you are adding supported 3rd party devices to VSN700-05 (Max version), follow the steps below to manually add the device. Alternatively, certain Modbus RTU devices can be auto-discovered using the Find button.

1. Go to the **Home** tab. Click on the Pencil icon across from **Devices**. The following screen appears:

2. The screen shows the current configuration settings for each port. To add a device select the Plus button on the RS-485 port that the device is connected to. A window appears to enter device settings.



3. Select the **Device Type** from the pull-down menu.

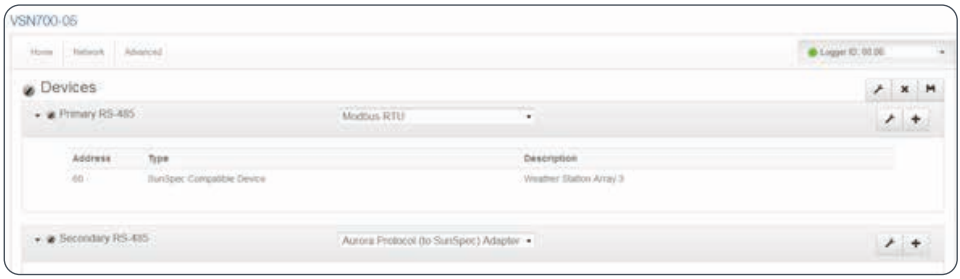
4. Set the **Slave Id** field to the RS-485 serial address of the device.

5. Enter a **Description** to help you identify the device if you need to change configurations later.

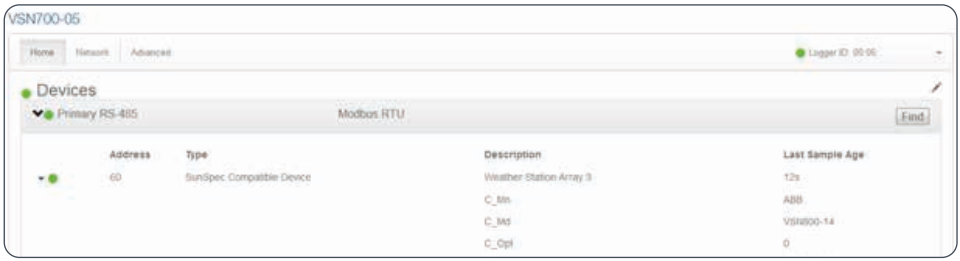
6. Click the **Add** button.

7. The device will be added to the **Devices** page, listed under the RS-485 port that it is connected to.

8. Press the Apply icon at the top to commit the changes.



9. After making changes, you are returned to the **Devices** page with the status indicators, as shown below. After sucessfully collecting the first sample the indicator will turn green; click the black triangle next to the status indicator to verify the data collected is correct.



8.5 Modbus TCP client

In addition to Modbus TCP server functionality, the data logger is also capable of polling Modbus TCP devices using its Modbus TCP client interface. The Modbus TCP device must be on (or be routed to/from) the same LAN that the data logger's Ethernet interfaces (Eth0 and/or Eth1) are connected to. The Modbus TCP interface must also be enabled by clicking the pencil icon and then using the dropdown menu to enable it. Save this change using the Apply icon and then the logger must be rebooted. Once rebooted, manually add devices to the Modbus TCP interface in a similar manner as described in the previous section. The type of device, its IP address, Modbus TCP server port, and its RS-485 address (slave Id) need to be specified. The IP Port will typically be 502 and the Slave Id will typically be 1 unless the device is behind a Modbus TCP gateway.

9. Troubleshooting

9.1 Troubleshooting guide

Issue: Aurora Vision does not show recent information from the monitoring system.
1. Verify the data logger is connected to power and the data logger's LED2 = GREEN.
2. Verify that the data logger has a network link, by checking that the **Eth0** LED on the data logger is green. If there is no network link then test the Ethernet (Cat-5 or better) cable with an appropriate data cable tester and verify the router, switch, or hub is operational.
3. Verify that you have a working Internet connection. This can be tested with a laptop by unplugging the Ethernet cable from Eth0 and connecting it to the laptop and testing to see if the laptop can connect to the Internet using the dynamic or static TCP/IP configuration for this network.
4. If all of the previous steps are correct restart the data logger by unplugging and then supplying power to the data logger.
5. If all of the previous steps do not help this issue, contact FIMER Technical Support.

Issue: I cannot connect directly to the web interface on the data logger.
1. Verify the data logger is connected to power and the data logger's LED2 = GREEN.
2. Verify that you have a working Ethernet cable. One end of the cable should be connected to **Eth1** and the other to your computer's Ethernet port. You should see a link LED illuminated for both the data logger and the computer.
3. Verify the Network settings on the computer. The Network settings for the Ethernet connection should be set to DHCP "Automatically obtain an IP address". Try to "Repair" or release/renew the network connection on the computer.
4. If all of the previous steps don't help, restart the data logger by unplugging the power cord, wait 30 seconds, and then resupply power. Also restart your computer.
5. Try using a different Ethernet cable; your cable may be defective.

Issue: I don't see all inverters or devices.
1. Verify that the undetected inverter is included in the list of supported inverters.
2. After 3 minutes, select "Refresh" on the web browser.
3. Close and reopen the web browser, then go to the Home page of the Data Logger (http://172.17.17.1).
4. If the Data Logger restarts, it means that it has received a new configuration which should now have all devices defined. Wait three minutes, then check the changes.
5. If all of the above does not solve the problem, contact FIMER technical support.

Issue: I do not see recent data for an inverter.
1. Select refresh on your web browser.
2. Close your web browser and reconnect to the data logger's **Home** page (http://172.17.17.1).
3. Check to make sure the inverter has power. Check the inverter's user/installation manual.
4. Check to make sure the RS-485 communication wires are properly connected. Make sure the data conductors are not swapped. Measure the DC Voltage across D+ and D- at both the monitoring enclosure and at the data terminals of the remote device. If the measurement is 0V DC you have a short in the data wires. If the difference between the two measurements is greater than 3V DC then you may have an open circuit.
5. If all of the previous steps do not help this issue, contact FIMER Technical Support.

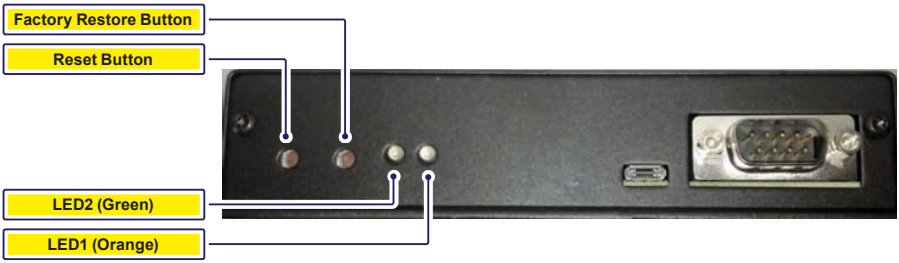
9.2 Resetting the data logger

Consult this section if you suspect there is a problem with the data logger. Some problems can be fixed by rebooting the logger or by restoring the logger to its factory defaults.

NOTE – If the data logger was previously registered on Aurora Vision and a factory restore is performed, you have to contact FIMER Technical Support to reset the data logger login credentials. Failure to reset the credentials will prevent the data logger to login to Aurora Vision.

On the end of the top side of the data logger housing (surface opposite the side with the Ethernet ports) are two small recessed buttons and two LEDs. The two buttons can be used to reset the system CPU (force a reboot) and to restore the unit to factory defaults. The two LEDs indicate the current status of the unit or the stage of the boot process.

Data Logger, Top Side



Checking the status LEDs on the logger is the first thing to do when troubleshooting a logger. A solid orange LED (or no LEDs lit when powered) is an indication that the logger is not running properly and may need replacement if the problem persists.
Press the Reset button closest to the corner of the data logger to reboot the unit. You need to wait until the logger is fully rebooted and then check to see if data is being transmitted correctly to see if this fixes the problem.

If problems persist, you may need to restore the data logger to factory defaults. Follow these steps to restore the data logger firmware to factory default.
1. Reboot the system. Momentarily press the Reset button on the logger or power cycle the logger.
2. Within 5 seconds of resetting or power cycling the logger, hold down Factory Restore button until both LEDs blink in a synchronized pattern. That is, both blink on and off at the same time. This should occur 15 to 30 seconds after step 1, depending on whether or not the Eth0 Ethernet interface is functional. If you cannot see the LEDs clearly, hold down Factory Restore button for 30 seconds to be sure.

The factory restore removes all user configurations but keeps any firmware upgrades. The ports have to be reconfigured as Modbus or Aurora Protocol if different than factory settings. Devices have to be rediscovered and any other configuration information added again. FIMER Technical support must also be contacted to have the Aurora Vision credentials reset for that data logger.

The table below shows the meaning of LED indicators during the start-up process and normal operation.

Boot/Operation Stage	LED Indicators
Powered Off	Both LEDs off
First Stage Bootloader	Orange LED lit solid
Second Stage Bootloader	Orange and Green LEDs lit solid
Kernel loading	No LEDs lit
Resetting to Factory Default (only if triggered)	Both Orange and Green LEDs blink synchronized
System Initialization	Green and Orange LEDs blink alternately
Running normally	Green LED lit solid

9.3 How to contact FIMER technical support

For technical support please go to www.fimer.com. When requesting technical support, please provide the following information:

• Model #
• Unit serial number
• Site/project name
• Problem description

Be prepared to describe the problem you are experiencing including specific details of the application, installation, and any additional pertinent information.

In the event that the equipment needs to be returned to the factory for any reason, please call to obtain a RMA number (Return Merchandise Authorization). Do not return items without a RMA number displayed on the outside of the package.

If you require an advance replacement to be shipped before the RMA unit has been received by FIMER, you will need to submit a valid purchase order for the replacement unit, referencing the RMA number on the P.O. When we receive the faulty unit, we will credit the cost of the replacement, if it is covered by the warranty.

Include a written statement describing the problems.

Send the package with shipping prepaid to our factory address. Insure your shipment. Our warranty does not cover damage incurred during transit.

10. Data logger specifications

Ethernet Network Connection
Primary Physical network connection on 10BaseT Ethernet or 100BaseTX Fast Ethernet networks using RJ45 twisted pair cable. (Port name - Eth0)
Secondary Physical network connection on 10BaseT Ethernet or 100BaseTX Fast Ethernet, limited to 12 MBit/s since connected through an internal USB port. (Port name - Eth1)

Serial Connection
- Two RS-232 serial ports terminated with 9 pin MALE D-SUB connectors. Support baud rates up to 230kbps.
- Two RS-485 serial ports supported on a single screw terminal block. Supports baud rates up to 115200 bps.

Devices Supported

- **VSN700-01 (Residential)**: Up to 5 FIMER (or legacy Power-One) single-phase or small three-phase (Trio 5.8/7.5/8.5) string inverters.
- **VSN700-3 (Commercial)**: Up to 10 FIMER (or legacy Power-One) string inverters and one FIMER weather station. String inverters can be single-phase or three-phase.
- **VSN700-05 (Max)**: All FIMER (or legacy Power-One) solar inverters. 3rd Party devices and other FIMER devices are also supported; consult the latest supported devices list for an up-to-date list.

USB 2.0 Ports
The USB Ports are currently not used.

Hardware
- CPU: Atmel AT91SAM9260 @ 400MHz
- DRAM: 64 Mbytes
- Flash memory: 256 Mbytes

Power Supply
- Power: 9-24 VDC (±10%)
- Power consumption is typically between 2.8 VA and 3.2 VA. With load on USB bus, power consumption is between 5.0 VA and 7.2 VA

Operating Environment
- Temperature: -40°C to +85°C (Data logger device only)
- Temperature: 0°C to +40°C (Data logger device plus AC/DC adapter)
- Humidity:<80% storage, <85% operating (non-condensing)

Dimension
- Height: 1.2“ (3.05 cm) x Width: 5.35” (13.56 cm) x Length: 5.25” (13.34 cm)
- Weight: 1 lbs. (0.454 kg)

Compliance

The data logger is compliant with both industrial and light industrial/commercial EMC standards for both emission and immunity.
FCC Part 15 Class A; CISPR 22, EN 55022 Conducted and Radiated Emission; CISPR 24, EN55024 Immunity

Safety

EN 60950-1, UL/CSA 60950-1 (External AC/DC Power Supply Adapter)

IP Network Services

Any network connected to the logger must allow traffic to pass on the following ports. Network firewall rules (if present) must allow responses to the logger over existing TCP connections.

Direction	Service/Port	Protocol	Description
Out	ssh/22	Tcp	For remote debugging by FIMER service personnel, the data logger utilizes encrypted SSH Remote Login Protocol. To allow service personnel remote access to the data logger, this port has to be opened in any firewall and forwarded to the data logger. (preferred)
Out	domain/53	Tcp/udp	The data logger must be able to resolve domain names, to ensure scalability and dynamic changes on the Internet (DNS). (required)
Out	https/443	Tcp	As an HTTP client, the data logger uses SSL/TLS protocol connections to Aurora Vision® servers for secure communication. The logger uses this port for all services, including data transmission, firmware upgrade, configuration management, and remote command transmission. (required)
Out	dhcp/67, dhcp/68	Udp	If DHCP service is not available, static network information must be assigned to the logger (preferred)
Out	ntp/123	Udp	The logger uses this port for network time services (NTP). (preferred)

Network Hosts

The logger will connect to the following hosts. Some servers owned by FIMER, and others are customer or ISP servers. Servers listed as owned by “Customer IT/ISP” must be configured in the logger using either DHCP or as static network information.

Host	Purpose	Port	Owner/Manager
platform.auroravision.net	Data, configuration	TCP:443	FIMER
gw1.auroravision.net and/or apt.fatspaniel.net	Logger firmware upgrade	TCP:443	FIMER
Site dependent	DHCP (optional)	UDP:67, UDP:68	Customer IT/ISP
Site dependent	DNS	UDP:53, TCP:53	Customer IT/ISP

Logger Network Configuration

The logger requires a valid network configuration in order to operate. This information can either be provided by a DHCP server provided by the customers network (the default), or the logger can be configured with static network information. Regardless of how the logger is configured, the following information is required.

Configuration	Purpose
IP Address	Allows the logger to take part in the local network. This does not need to be a public IP address. In most cases this is a private IP address.
Subnet mask	Used to determine if two computers are on the same network.
Gateway	The IP address of the computer which will forward network traffic from the local network to an external network
DNS Server	The IP address(es) of the computer(s) which resolve domain names.

ENGLISH

The symbol of the crossed-out wheeled bin identifies electrical and electronic equipment (EEE) placed on the market after 13 August 2005 which should be separately collected in accordance with the Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE).

Users of EEE from private households (consumers) within each European Union country:
Electrical and electronic equipment should be disposed of in appropriate collection facilities as set up by the competent authorities within each Member State or in accordance with that Member State's national regulations regarding WEEE collection and disposal.

Professional users (Companies - Enterprises) within each European Union country:
Electrical and electronic equipment should be disposed of in accordance with the Member State's national regulations regarding WEEE collection and disposal. Further information should be obtained from the reseller or local vendor.

Both Private and Professional Users from countries outside the European Union:
Electrical and electronic equipment should be disposed of in accordance with the Member State's national regulations regarding WEEE collection and disposal.
Inappropriate EEE disposal could have a negative environmental impact and hamper human health. Cooperating in the appropriate disposal of this product contributes to product reuse and recycling, while protecting our environment.

ITALIANO

Il simbolo del contenitore di spazzatura su ruote barrato, accompagnato da una barra piena orizzontale, identifica le apparecchiature elettriche ed elettroniche, immesse sul mercato dopo il 13 agosto 2005, oggetto di raccolta separata in conformità alla Direttiva Europea 2012/19/UE (WEEE Directive).

Utenti domestici (privati cittadini) della Comunità Europea:
Lo smaltimento di questa apparecchiatura elettrica ed elettronica può avvenire presso le isole ecologiche messe a disposizione dagli enti locali o comunque seguendo le indicazioni delle autorità locali per la raccolta differenziata dei rifiuti elettronici.

Utenti professionali (Aziende-Imprese) della Comunità Europea:
Lo smaltimento di questa apparecchiatura elettrica ed elettronica deve avvenire in conformità alla legislazione locale. Contattare il rivenditore o il fornitore locale per ulteriori informazioni.

Utenti domestici e professionali in altri paesi fuori dalla Comunità Europea:
Lo smaltimento di questa apparecchiatura elettrica ed elettronica deve avvenire in conformità alla legislazione locale.
Uno smaltimento dei rifiuti inappropriato può avere effetti negativi sull'ambiente e sulla salute umana. Collaborando allo smaltimento corretto di questo prodotto, si contribuisce al riutilizzo, al riciclaggio e al recupero del prodotto, e alla protezione del nostro ambiente.

DEUTSCH

Mit dem Symbol der ausgekreuzten Mülltonne werden Elektro- und Elektronikgeräte gekennzeichnet, die nach dem 13. August 2005 auf den Markt gebracht wurden und in Einklang mit der Richtlinie 2012/19/EU des Europäischen Parlaments über Elektro- und Elektronik-Altgeräte (WEEE) getrennt zu sammeln sind.

Benutzer von Elektro- und Elektronikgeräten aus privaten Haushalten (Konsumenten) in den Mitgliedstaaten der Europäischen Union:
Elektro- und Elektronikgeräte sind bei einer hierfür von den zuständigen Behörden eingerichteten geeigneten Annahmestelle im jeweiligen Mitgliedstaat abzugeben oder in Einklang mit den nationalen Bestimmungen des Mitgliedstaats hinsichtlich der Sammlung und Entsorgung von Elektro- und Elektronikgeräten gemäß der WEEE-Richtlinie zu entsorgen.

Professionelle Benutzer (Unternehmen) in den Mitgliedstaaten der Europäischen Union:
Elektro- und Elektronikgeräte sind in Einklang mit den nationalen Bestimmungen des Mitgliedstaats hinsichtlich der Sammlung und Entsorgung von Elektro- und Elektronikgeräten gemäß der WEEE-Richtlinie zu entsorgen. Für nähere Informationen wenden Sie sich bitte an den Wiederverkäufer oder Ihren Händler vor Ort.

Sowohl private als auch professionelle Benutzer in den Mitgliedstaaten der Europäischen Union:
Elektro- und Elektronikgeräte sind in Einklang mit den nationalen Bestimmungen des Mitgliedstaats hinsichtlich der Sammlung und Entsorgung von Elektro- und Elektronikgeräten gemäß der WEEE-Richtlinie zu entsorgen.
Bei unsachgemäßer Entsorgung besteht das Risiko nachteiliger Auswirkungen auf Umwelt und Gesundheit. Durch Ihre Kooperation zur ordnungsgemäßen Entsorgung fördern Sie die Wiederverwendung und das Recycling des Produkts und tragen zum Umweltschutz bei.

ESPAÑOL

El símbolo del contenedor de basura tachado con un aspa identifica aquellos aparatos eléctricos y electrónicos (AEE, EEE por sus siglas en inglés) lanzados al mercado después del 13 de agosto de 2005 que deben recogerse de forma separada de acuerdo con la Directiva 2012/19/UE del Parlamento Europeo y el Consejo Europeo sobre residuos de aparatos eléctricos y electrónicos (RAEE).

Usuarios particulares de AEE (consumidores) en cada uno de los países de la Unión Europea:
Los aparatos eléctricos y electrónicos deben eliminarse en los puntos de recolección adecuados establecidos por las autoridades competentes de cada Estado miembro de acuerdo con las normativas nacionales de dicho Estado miembro sobre la recolección y eliminación de RAEE.

Usuarios profesionales (Empresas e Instituciones) en cada uno de los países de la Unión Europea:
Los aparatos eléctricos y electrónicos deben eliminarse de acuerdo con las normativas nacionales sobre la recolección y eliminación de RAEE. Puede obtener más información en su distribuidor o proveedor local.

Usuarios particulares y profesionales de países no pertenecientes a la Unión Europea:
Los aparatos eléctricos y electrónicos deben eliminarse de acuerdo con las normativas nacionales sobre la recolección y eliminación de RAEE.
La eliminación inadecuada de un AEE puede tener un impacto negativo en el medio ambiente y perjudicar la salud humana. Su cooperación en la eliminación adecuada de este producto contribuye a su reutilización y reciclado a la vez que protege el medio ambiente.

FRANÇAIS

Le symbole de poubelle interdite identifie les équipements électriques et électroniques (EEE) mis sur le marché après le 13 août 2005 qui doivent être collectés séparément conformément à la Directive 2012/19/UE du Parlement européen et du Conseil relative aux déchets d'équipements électriques et électroniques (DEEE).

Ménages utilisateurs d'EEE (consommateurs) dans chaque pays de l'Union européenne:
Les équipements électriques et électroniques doivent être mis au rebut dans des points de collecte appropriés mis en place par les autorités compétentes au sein de chaque État membre ou conformément aux réglementations nationales de cet État membre relatives à la collecte et à la mise au rebut des EEE.

Utilisateurs professionnels (sociétés - entreprises) au sein de chaque pays de l'Union européenne:
Les équipements électriques et électroniques doivent être mis au rebut conformément aux réglementations nationales de l'État membre relatives à la mise au rebut des EEE. Pour plus d'informations, contactez le revendeur ou le fournisseur local.

Utilisateurs privés et professionnels des pays hors Union européenne:
Les équipements électriques et électroniques doivent être mis au rebut conformément aux réglementations nationales de l'État membre relatives à la mise au rebut des EEE.
La mise au rebut inappropriée des EEE peut avoir un effet néfaste sur l'environnement et sur la santé humaine. En participant à la mise au rebut appropriée de ce produit, vous contribuez à sa réutilisation et à son recyclage tout en protégeant notre environnement.

PORTUGUÊS

O símbolo do contentor com uma cruz sobreposta identifica equipamentos elétricos e eletrónicos (EEE) colocados no mercado após 13 de agosto de 2005, que devem ser recolhidos separadamente de acordo com a Diretiva 2012/19/UE do Parlamento Europeu e do Conselho sobre resíduos de equipamentos elétricos e eletrónicos (WEEE).

Utilizadores de EEE de ambientes domésticos privados (consumidores) dentro de cada país da União Europeia:
Os equipamentos elétricos e eletrónicos deverão ser eliminados em instalações de recolha adequadas, conforme estabelecido pelas autoridades competentes dentro de cada Estado Membro, ou de acordo com os regulamentos nacionais desse Estado Membro sobre a recolha e eliminação de WEEE.

Utilizadores profissionais (Companhias - Empresas) dentro de cada país da União Europeia:
Os equipamentos elétricos e eletrónicos deverão ser eliminados de acordo com os regulamentos nacionais dos Estados Membros sobre a recolha e eliminação de WEEE. Informações adicionais deverão ser obtidas junto do revendedor ou do fornecedor local.

Utilizadores privados e profissionais dos países fora da União Europeia:
Os equipamentos elétricos e eletrónicos deverão ser eliminados de acordo com os regulamentos nacionais dos Estados Membros sobre a recolha e eliminação de WEEE.
A eliminação inadequada de EEE poderá ter um impacto ambiental negativo e afetar a saúde humana. A cooperação com a eliminação adequada destes produtos contribui para a reutilização e reciclagem dos mesmos, protegendo simultaneamente o nosso ambiente.

NEDERLASNDS

Het symbool van de doorkruiste afvalbak identificeert elektrische en elektronische apparatuur (EEA) op de markt gebracht na 13 augustus 2005, die apart moet worden verzameld in overeenstemming met de Richtlijn 2012/19/EU van het Europees Parlement en de Raad betreffende afgedankte elektrische en elektronische apparatuur (AEEA).

Gebruikers van EEA uit particuliere huishoudens (consumenten) in elk land van de Europese Unie:
Elektrische en elektronische apparatuur moet worden weggegooid via de daarvoor bestemde voorzieningen zoals opgezet door de bevoegde autoriteiten in elke lidstaat of in overeenstemming met de nationale wetgeving van de lidstaat met betrekking tot de inzameling en verwijdering van AEEA.

Professionele gebruikers (Bedrijven - Ondernemingen) in elk land van de Europese Unie:
Elektrische en elektronische apparatuur dient te worden vernietigd in overeenstemming met de nationale voorschriften van de lidstaat met betrekking tot de inzameling en verwijdering van AEEA. Nadere informatie moet worden verkregen van de verkoper of lokale leverancier.

Zowel particuliere als professionele gebruikers uit landen buiten de Europese Unie:
Elektrische en elektronische apparatuur dient te worden vernietigd in overeenstemming met de nationale voorschriften van de lidstaat met betrekking tot de inzameling en verwijdering van AEEA.
Onjuiste verwijdering van EEA kan een negatieve invloed op het milieu hebben en de menselijke gezondheid schaden. Samenwerking bij de correcte verwijdering van dit product draagt bij aan hergebruik en recycling en beschermt ons milieu.

SVENSKA

Symbolen med en överkryssad soptunna på hjul identifierar elektrisk och elektronisk utrustning (EEE) som lanserats på marknaden efter 13 augusti 2005 som ska samlas in separat i enlighet med Europaparlamentets och rådets direktiv 2012/19/EU om avfall som utgörs av eller innehåller elektriska eller elektroniska produkter (WEEE).

Användare av EEE i privathushållen (konsumenter) i varje land inom Europeiska unionen:
Elektrisk och elektronisk utrustning ska bortskaffas på lämpliga uppsamlingsanläggningar som inrättats av behöriga myndigheter i varje medlemsstat eller i enlighet med den medlemsstatens nationella bestämmelser gällande uppsamling och bortskaffande av WEEE.

Yrkesmässiga användare (bolag – företag) i varje land inom Europeiska unionen:
Elektrisk och elektronisk utrustning ska bortskaffas i enlighet med medlemsstatens nationella bestämmelser gällande uppsamling och bortskaffande av WEEE. Ytterligare information ska erhållas från återförsäljaren eller den lokala säljaren.

Både privata och yrkesmässiga användare från länder utanför Europeiska unionen:
Elektrisk och elektronisk utrustning ska bortskaffas i enlighet med medlemsstatens nationella bestämmelser gällande uppsamling och bortskaffande av WEEE.
Olämpligt bortskaffande av EEE kan ha en negativ miljöpåverkan och skada människors hälsa. I och med att du samarbetar i fråga om att bortskaffa den här produkten på ett lämpligt sätt, bidrar du till att produkten kan återanvändas och återvinnas, samtidigt som du hjälper till att skydda miljön.

DANSK

Symbolet med den overstregede affaldsspand med hjul angiver, at elektrisk og elektronisk udstyr (EEE), der er markedsført efter d. 13. august 2005, skal indsamles særskilt i henhold til Europa-Parlamentets og Rådets direktiv 2012/19/EU om affald af elektrisk og elektronisk udstyr (WEEE).

Brugere af EEE fra private husholdninger (forbrugere) inden for hvert EU-medlemsland:
Elektrisk og elektronisk udstyr skal bortskaffes via passende indsamlingsfaciliteter, der er etableret af de ansvarlige myndigheder i hver medlemsstat, eller i henhold til den pågældende medlemsstats nationale lovgivning vedrørende indsamling og bortskaffelse af WEEE.

Professionelle brugere (virksomheder – firmaer) inden for hvert EU-medlemsland:
Elektrisk og elektronisk udstyr skal bortskaffes i henhold til den pågældende medlemsstats nationale lovgivning vedrørende indsamling og bortskaffelse af WEEE. Yderligere oplysninger kan rekvireres fra forhandleren eller den lokale leverandør.

Både private og professionelle brugere fra lande uden for den Europæiske Union:
Elektrisk og elektronisk udstyr skal bortskaffes i henhold til den pågældende medlemsstats nationale lovgivning vedrørende indsamling og bortskaffelse af WEEE.
Uhensigtsmæssig bortskaffelse af EEE kan have en negativ virkning på miljøet og folks helbred. Samarbejde i forbindelse med korrekt bortskaffelse af disse produkter bidrager til genbrug og genindvindelse, samtidig med at miljøet beskyttes.

SUOMI

Merkki, jossa on yli rastittu pyörällinen jäteastia, viittaa 13.8.2005 jälkeen markkinoille tuotuihin sähkö- ja elektroniikkalaitteisiin, jotka Euroopan parlamentin ja neuvoston sähkö- ja elektroniikkalaiteromusta annetun direktiivin 2012/19/EU (WEEE) mukaisesti on kerättävä erikseen.

Yksityisten kotitalouksien sähkö- ja elektroniikkalaitteiden käyttäjät (kuluttajat) kussakin Euroopan unionin maassa:
Sähkö- ja elektroniikkalaitteet on hävitettävä kunkin jäsenvaltion toimivaltaisten viranomaisten järjestämien keräyspisteiden kautta tai kyseisen jäsenvaltion kansallisten sähkö- ja elektroniikkalaiteromun keräystä ja hävittämistä koskevien määräysten mukaisesti.

Ammattikäyttäjät (yritykset) kussakin Euroopan unionin maassa:
Sähkö- ja elektroniikkalaitteet on hävitettävä jäsenvaltion kansallisten sähkö- ja elektroniikkalaiteromun keräystä ja hävittämistä koskevien määräysten mukaisesti. Lisätietoja on voitava saada jälleenmyyjältä tai paikalliselta toimittajalta.

Euroopan unionin ulkopuolisten maiden yksityiset ja ammattikäyttäjät:
Sähkö- ja elektroniikkalaitteet on hävitettävä jäsenvaltion kansallisten sähkö- ja elektroniikkalaiteromun keräystä ja hävittämistä koskevien määräysten mukaisesti.
Sähkö- ja elektroniikkalaitteiden epäasianmukaisella hävittämisellä voi olla haitallisia vaikutuksia ympäristöön ja ihmisten terveyteen. Yhteistyö tämän tuotteen asianmukaiseksi hävittämiseksi edistää tuotteen uudelleenkäyttöä ja kierrätystä ja suojelee ympäristöämme.

ČESKY

Symbol přeškrtnuté popelnice na kolečkách označuje elektrické a elektronické zařízení (EEZ) prodávané na trhu od 13. srpna 2005, které by mělo být sbíráno samostatně v souladu se Směrnicí 2012/19/EU Evropského parlamentu a rady o odpadním elektrickém a elektronickém zařízení (OEEZ).

Uživatelé EEZ v domácnostech (spotřebitelé) v zemích Evropské unie:
Elektrické a elektronické zařízení by mělo být likvidováno na příslušných sběrných místech zřízených kompetentními úřady v jednotlivých členských státech nebo v souladu s národními předpisy příslušného členského státu ohledně sběru a likvidace OEEZ.

Firemní uživatelé (společnosti a podniky) v zemích Evropské unie:
Elektrické a elektronické zařízení by mělo být likvidováno v souladu s národními předpisy členského státu týkajících se sběru a likvidace OEEZ. Další informace je třeba zajistit od distributora nebo místního prodejce.

Soukromí uživatelé i firmy ze zemí mimo Evropskou unii:
Elektrické a elektronické zařízení by mělo být likvidováno v souladu s národními předpisy členského státu ohledně sběru a likvidace OEEZ.
Nesprávná likvidace EEZ může mít negativní dopad na životní prostředí a zdraví lidí. Spolupráce na řádné likvidaci tohoto výrobku přispívá k opětovnému použití a recyklaci výrobků a ochraně našeho životního prostředí.

ΕΛΛΗΝΙΚΆ

Το σύμβολο με τον διαγεγραμμένο τροχήλατο κάδο προσδιορίζει ηλεκτρικό και ηλεκτρονικό εξοπλισμό (ΕΕΕ) που έχει κυκλοφορήσει στην αγορά μετά τις 13 Αυγούστου 2005 και θα πρέπει να συλλέγεται ξεχωριστά, σύμφωνα με την Οδηγία 2012/19/ΕΕ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου περί απόβλητου ηλεκτρικού και ηλεκτρονικού εξοπλισμού (ΑΗΗΕ).

Χρήστες ηλεκτρικού και ηλεκτρονικού εξοπλισμού από ιδιωτικά νοικοκυριά (καταναλωτές) εντός κάθε χώρας της Ευρωπαϊκής Ένωσης:
Ο ηλεκτρικός και ηλεκτρονικός εξοπλισμός θα πρέπει να απορρίπτεται σε κατάλληλες εγκαταστάσεις συλλογής, όπως ορίζονται από τις αρμόδιες αρχές εντός κάθε κράτους-μέλους ή σύμφωνα με τους εθνικούς κανονισμούς του συγκεκριμένου κράτους-μέλους αναφορικά με τη συλλογή και την απόρριψη απόβλητου ηλεκτρικού και ηλεκτρονικού εξοπλισμού.

Επαγγελματίες χρήστες (εταιρείες, επιχειρήσεις) εντός κάθε χώρας της Ευρωπαϊκής Ένωσης:
Ο ηλεκτρικός και ηλεκτρονικός εξοπλισμός θα πρέπει να απορρίπτεται σύμφωνα με τους εθνικούς κανονισμούς του κράτους-μέλους αναφορικά με τη συλλογή και την απόρριψη απόβλητου ηλεκτρικού και ηλεκτρονικού εξοπλισμού. Περαιτέρω πληροφορίες θα πρέπει να εξασφαλίζονται από το μεταπωλητή ή τον τοπικό προμηθευτή.

Ιδιώτες και επαγγελματίες χρήστες από χώρες εκτός της Ευρωπαϊκής Ένωσης:
Ο ηλεκτρικός και ηλεκτρονικός εξοπλισμός θα πρέπει να απορρίπτεται σύμφωνα με τους εθνικούς κανονισμούς του κράτους-μέλους αναφορικά με τη συλλογή και την απόρριψη απόβλητου ηλεκτρικού και ηλεκτρονικού εξοπλισμού.
Η ακατάλληλη απόρριψη ηλεκτρικού και ηλεκτρονικού εξοπλισμού θα μπορούσε να έχει αρνητικό αντίκτυπο στο περιβάλλον και να δημιουργήσει προβλήματα στην ανθρώπινη υγεία. Με τη συνεργασία για την κατάλληλη απόρριψη αυτού του προϊόντος, συμβάλλετε στην εκ νέου χρήση και ανακύκλωση του προϊόντος, προστατεύοντας παράλληλα το περιβάλλον μας.

POLSKI

Symbol przekreślonego kosza na śmieci na kółkach na sprzecie elektrycznym i elektronicznym (EEE) wypuszczonym na rynek po 13 sierpnia 2005 oznacza, że powinien być on zbierany oddzielnie, zgodnie z Dyrektywą 2012/19/UE Parlamentu Europejskiego i Rady w sprawie zużytego sprzętu elektrycznego i elektronicznego (WEEE).

Użytkownicy EEE w gospodarstwach domowych (konsumenci) w każdym z państw Unii Europejskiej:
Sprzęt elektryczny i elektroniczny należy oddawać do odpowiednich punktów zbioru utworzonych przez upoważnione organy w każdym państwie członkowskim lub zgodnie z regulacjami krajowymi dotyczącymi zbierania i pozbywania się WEEE w danym państwie członkowskim.

Użytkownicy profesjonalni (firmy i przedsiębiorstwa) w każdym z państw Unii Europejskiej:
elektrycznego i elektronicznego należy pozbywać się zgodnie z regulacjami krajowymi dotyczącymi zbierania i pozbywania się WEEE w danym państwie członkowskim. Dalsze informacje można uzyskać od odsprzedającego lub lokalnego sprzedawcy.

Zarówno użytkownicy prywatni, jak i profesjonalni z krajów nienależących do Unii Europejskiej:
Sprzętu elektrycznego i elektronicznego należy pozbywać się zgodnie z regulacjami krajowymi dotyczącymi zbierania i pozbywania się WEEE w danym państwie członkowskim.
Nieodpowiednie pozbywanie się EEE może mieć negatywny wpływ na środowisko i zagrażać zdrowiu ludzi. Współpraca przy odpowiednim pozbywaniu się tego produktu przyczynia się do ponownego używania i recyklingu, a także do ochrony środowiska.

SLOVENČINA

Symbol prečiarknutej odpadkovej nádoby na kolieskach označuje elektrické a elektronické zariadenie (EEZ) predávané na trhu od 13. augusta 2005, ktoré by malo byť zbierané samostatne v súlade so Smernicou 2012/19/EÚ Európskeho parlamentu a rady o odpadovom elektrickom a elektronickom zariadení (OEEZ).

Používatelia EEZ v domácnostiach (spotrebitelia) v krajinách Európskej únie:
Elektrické a elektronické zariadenie by malo byť likvidované na príslušných zberných miestach zriadených kompetentnými úradmi v jednotlivých členských štátoch alebo v súlade s národnými predpismi príslušného členského štátu týkajúcimi sa zberu a likvidácie OEEZ.

Firemní používatelia (spoločnosti a podniky) v krajinách Európskej únie:
Elektrické a elektronické zariadenie by malo byť likvidované v súlade s národnými predpismi členského štátu týkajúcich sa zberu a likvidácie OEEZ. Ďalšie informácie je potrebné zaistiť od distribútora alebo miestneho predajcu.

Súkromní používatelia i firmy z krajín mimo Európskej únie:
Elektrické a elektronické zariadenie by malo byť likvidované v súlade s národnými predpismi členského štátu týkajúcimi sa zberu a likvidácie OEEZ.
Nesprávna likvidácia EEZ môže mať negatívny dopad na životné prostredie a zdravie ľudí. Spolupráca na riadnej likvidácii tohto výrobku prispieva k opätovnému použitiu a recyklácii výrobkov a ochrane nášho životného prostredia.

SLOVENŠČINA

Simbol prečrtanega koša za smeti na kolesih je znak za električno in elektronsko opremo (EEO), ki je bila dana na trg po 13. avgustu 2005 in jo je treba zbirati ločeno skladno z Direktivo 2012/19/EU Evropskega parlamenta in Sveta o odpadni električni in elektronski opremi (OEEO).

Uporabniki električne in elektronske opreme v zasebnih gospodinjstvih (potrošniki) v posamezni državi Evropske unije:
Električno in elektronsko opremo je treba predati ustreznim zbirnim centrom, ki so jih ustanovile pristojne oblasti v posamezni državi članici, ali skladno z nacionalnimi predpisi države članice o zbiranju in odlaganju OEEO.

Profesionalni uporabniki (podjetja) v posamezni državi Evropske unije:
Električno in elektronsko opremo je treba odvreči skladno z nacionalnimi predpisi države članice o zbiranju in odlaganju OEEO. Za dodatne informacije se obrnite na prodajalca ali lokalnega dobavitelja.

Zasebni in profesionalni uporabniki iz držav izven Evropske unije:
Električno in elektronsko opremo je treba odvreči skladno z nacionalnimi predpisi države članice o zbiranju in odlaganju OEEO.
Neustrezno odlaganje OEEO lahko škoduje okolju in zdravju ljudi. Z ustreznim odlaganjem tega izdelka prispevate k njegovi ponovni uporabi, recikliranju in zaščiti okolja.

LIETUVIŲ

Perbraukstos šiukšlių dėžės su ratukais simbolis reiškia, kad vadovaujantis Europos parlamento direktyva 2012/19/ES ir Tarybos direktyva dėl elektros ir elektroninės įrangos atliekų (WEEE), elektrinė ir elektroninė įranga (EEE), pateikta į rinką po 2005 m. rugpjūčio 13 d., turi būti surenkama atskirai.

Privatūs namų ūkiai (naudotojai), naudojantys EEE bet kurioje Europos Sąjungos šalyje:
Elektros ir elektroninė įranga turi būti perduodama į atitinkamus surinkimo centrus, kaip tai yra nustatyta kompetentingų institucijų kiekvienoje valstybėje narėje arba pagal tos valstybės narės nacionalinius teisės aktus, reglamentuojančius WEEE atliekų surinkimą ir šalinimą.

Profesionalūs naudotojai (įmonės)bet kurioje Europos sąjungos šalyje:
Elektros ir elektroninė įranga turi būti pašalinta vadovaujantis valstybės narės nacionaliniais teisės aktais, reglamentuojančiais WEEE atliekų surinkimas ir šalinimas. Daugiau informacijos galite gauti iš atstovo arba vietos pardavėjo.

Privatūs ir profesionalūs naudotojai iš Europos Sąjungai nepriklausančių šalių:
elektros ir elektroninė įranga turi būti pašalinta vadovaujantis valstybės narės nacionaliniais teisės aktais, reglamentuojančiais WEEE atliekų surinkimas ir šalinimas.
Netinkamas EEE šalinimas gali neigiamai veikti aplinką ir žmonių sveikatą. Dalyvaudami teisingame šio gaminio šalinimo procese, jūs ne tik saugote aplinką, bet ir prisidedate prie pakartotinio gaminio panaudojimo ir perdirbimo.

EESTI

Läbikriipsutatud ratastega prügikonteineri sümbol tähistab pärast 13. augustit 2005 turuletoodud elektri- ja elektroonikaseadmeid, mis tuleb kokku koguda kooskõlas Euroopa Parlamendi ja nõukogu direktiiviga 2012/19/EL elektri- ja elektroonikaseadmete jäätmete kohta.

Elektri- ja elektroonikaseadmete kasutajad kodumajapidamistes (tavatarbijad) igas Euroopa Liidu riigis:
Elektri- ja elektroonikaseadmed tuleb kõrvaldada iga liikmesriigi pädevate asutuste rajatud asjakohastes kogumiskohtades või kooskõlas selle liikmesriigi elektri- ja elektroonikaseadmete jäätmete kogumist ja kõrvaldamist käsitlevate riiklike eeskirjadega.

Erialased kasutajad (ettevõtted) igas Euroopa Liidu riigis:
Elektri- ja elektroonikaseadmeid tuleb kõrvaldada liikmesriigi elektri- ja elektroonikaseadmete jäätmete kogumist ja kõrvaldamist käsitlevate riiklike eeskirjadega. Lisateavet peaks saama edasimüüjalt või kohalikult müüjalt.

Kodumajapidamised ja erialased kasutajad Euroopa Liidu välistest riikidest:
Elektri- ja elektroonikaseadmed tuleb kõrvaldada liikmesriigi elektri- ja elektroonikaseadmete jäätmete kogumist ja kõrvaldamist käsitlevate riiklike eeskirjadega.
Elektri- ja elektroonikaseadmete sobimatul kõrvaldamisel võib olla keskkonda ja inimeste tervist kahjustav mõju. Koostöö selle toote asjakohasel kõrvaldamisel aitab kaasa toote taaskasutamisele ja ringlusevõtule ning kaitseb ühtlasi meie keskkonda.

LATVIEŠU

Simbols, kurā attēlots nosvītrots atkritumu konteiners ar ritenjiem, identificē elektriskās un elektroniskās iekārtas (EEI), kas nokļuvušas tirdzniecībā pēc 2005. gada 13. augusta un kuras ir jāsavāc atsevišķi saskaņā ar Eiropas Parlamenta un Padomes Direktīvu 2012/19/ES par elektrisko un elektronisko iekārtu atkritumiem (EEIA).

EEI lietotāji mājsaimniecībās (patērētāji) visās Eiropas Savienības valstīs:
Elektriskās un elektroniskās iekārtas ir jālikvidē atbilstošos savākšanas punktos, ko ierīkojušas atbildīgās varas iestādes katrā dalībvalstī vai saskaņā ar šīs dalībvalsts noteikumiem attiecībā uz EEIA savākšanu un likvidēšanu.

Profesionālie lietotāji (uzņēmumi) visās Eiropas Savienības valstīs:
Elektriskās un elektroniskās iekārtas ir jālikvidē saskaņā ar dalībvalstī spēkā esošajiem tiesību aktiem attiecībā uz EEIA savākšanu un likvidēšanu. Papildinformācija jāsaņem no tālākpārdevēja vai vietējā piegādātāja.

Privātie un profesionālie lietotāji valstīs ārpus Eiropas Savienības:
Elektriskās un elektroniskās iekārtas ir jālikvidē saskaņā ar dalībvalstī spēkā esošajiem tiesību aktiem attiecībā uz EEIA savākšanu un likvidēšanu.
Neatbilstoša EEI likvidēšana var nelabvēlīgi ietekmēt vidi un bojāt cilvēku veselību. Kopīgi sadarbojoties, lai atbilstoši likvidētu šo produktu, tiek veicināta produkta atkārtota izmantošana un pārstrāde, vienlaikus aizsargājot mūsu vidi.

BOSANSKI

Simbol precrtane korpe sa točkićima označava električnu i elektronsku opremu (Electrical and Electronic Equipment, EEE) koja je predstavljena na tržištu nakon 13. avgusta 2005. godine i koju treba zasebno prikupljati u skladu sa Direktivom 2012/19/EU Evropskog parlamenta i saveta u vezi sa otpadom koji čini električna i elektronska oprema (Waste Electrical and Electronic Equipment, WEEE).

Korisnici EEE iz privatnih domaćinstava (potrošači) u svakoj državi Evropske unije:
Električnu i elektronsku opremu treba odlagati u odgovarajućim objektima za prikupljanje koje su osnovale nadležne vlasti u svakoj državi članici ili u skladu sa nacionalnim propisima te državе članice u vezi sa prikupljanjem i odlaganjem WEEE.

Profesionalni korisnici (kompanije – preduzeća) u svakoj državi Evropske unije:
Električnu i elektronsku opremu treba odlagati u skladu sa nacionalnim propisima države članice u vezi sa prikupljanjem i odlaganjem WEEE. Dodatne informacije treba pribaviti od distributera ili lokalnog prodavca.

Privatni i profesionalni korisnici iz država izvan Evropske unije:
Električnu i elektronsku opremu treba odlagati u skladu sa nacionalnim propisima države članice u vezi sa prikupljanjem i odlaganjem WEEE.
Nepravilno odlaganje EEE može da dovede do negativnog uticaja na životnu sredinu i ugrožavanja zdravlja ljudi. Saradnja u vezi sa odgovarajućim odlaganjem ovog proizvoda doprinosi ponovnoj upotrebi i recikliži proizvoda a istovremeno štiti našu životnu sredinu.

MAGYAR

Az áthúzott kuka szimbólum a 2005. augusztus 13-a után piacra kerülő elektromos és elektronikus berendezéseket (EEE) jelöli, amelyeket külön kell gyűjteni az Európai Parlament és az Európai Tanács elektromos és elektronikus berendezések hulladékairól szóló 2012/19/EU irányelvének (WEEE-irányelv) értelmében.

EEE-felhasználók (fogyasztók) az Európai Unió egyes tagországainak magánháztartásaiban:
Az elektronikus és elektromos berendezések minden egyes tagállam illetékes hatósága által kijelölt, arra megfelelő gyűjtőhelyeire történő helyezhetők el, az adott tagállam WEEE-gyűjtésre és -ártalmatlanításra vonatkozó nemzeti szabályozásának megfelelő módon.

Üzleti felhasználók (cégek, vállalatok) az Európai Unió egyes tagországaiban:
Az elektromos és elektronikus berendezések az adott tagállam WEEE-gyűjtésre és -ártalmatlanításra vonatkozó nemzeti szabályozásának megfelelő módon helyezhetők el. További információkért forduljon a visszonteladóhoz vagy helyi kereskedőhöz.

Magán- és üzleti felhasználók az Európai Unión kívüli országokban:
Az elektromos és elektronikus berendezések az adott tagállam WEEE-gyűjtésre és -ártalmatlanításra vonatkozó nemzeti szabályozásának megfelelő módon helyezhetők el.
A nem megfelelő EEE-ártalmatlanítás káros környezeti hatásokkal járhat, és veszélyeztetheti az emberi egészséget. A termék megfelelő módon történő ártalmatlanításában való közreműködésével Ön hozzájárul a termék újrafelhasználásához, újrahasznosításához, valamint környezetünk védelméhez.

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